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Declarations under Rule 4.17:

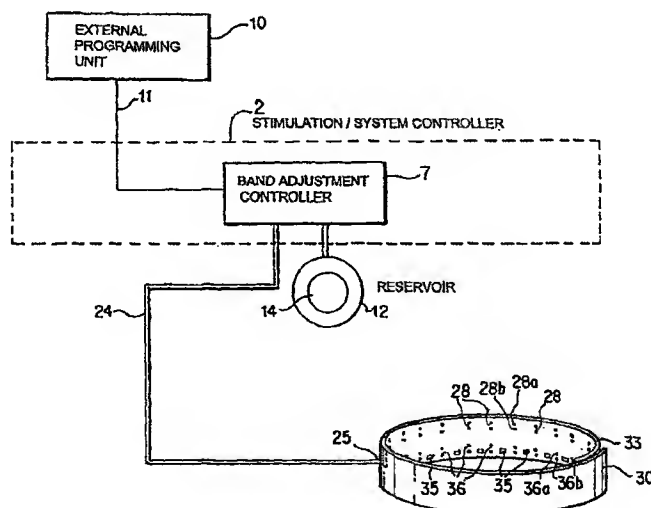
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report

[Continued on next page]

(54) Title: NONINVASIVELY ADJUSTABLE GASTRIC BAND



(57) Abstract: A method and apparatus for treatment of an eating disorder includes electrically, mechanically and/or pharmaceutically/chemically stimulating a of the vagus nerve of the lower esophagus, cardia, esophageal/cardia junction, cardia/fundus junction or upper stomach so as to induce afferent action potentials on the vagus nerve. The device may be noninvasively adjusted after implantation to provide increased or decreased restriction on the patient's gastrointestinal tract. Each stimulus may be administered as a series of programmed pulses of defined amplitude, duration and period, to evoke a responsive signal to the brain by the target nerve, effective for producing a temporary feeling of satiety in the person. An implantable stimulus generator may be operatively coupled to a nerve electrode, pressure device or chemical outlet to apply a defined signal to a selected nerve branch. The implantable stimulus generator is programmable to allow clinician programming of defined signal parameters effective to treat the eating disorder of the patient. Methods are also provided to identify electrodes nearest to a branch of the vagus nerve to apply an electrical stimulation signal with improved efficiency.



(88) Date of publication of the international search report:
22 March 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61N1/36 A61F5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A61N A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/007232 A (IMPULSE DYNAMICS NV; BEN HAIM, SHLOMO; POLICKER, SHAI; BITON, OFIR; HA) 27 January 2005 (2005-01-27) page 23, line 19 - page 25, line 9 page 26, lines 3-15 page 35, lines 10-20 page 36, lines 1-27 page 38, line 26 - page 39, line 2 -----	18, 21-27, 29, 31-36, 38
X	US 6 450 173 B1 (FORSELL PETER) 17 September 2002 (2002-09-17) the whole document ----- -/--	18, 19, 21, 33-36, 38

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

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- *E* earlier document but published on or after the international filing date
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Date of the actual completion of the international search

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 188 104 A (WERNICKE ET AL) 23 February 1993 (1993-02-23) cited in the application the whole document -----	23-27, 29-32
A	WO 2004/069330 A (ENTEROMEDICS INC; KNUDSON, MARK, B; CONRAD, TIMOTHY, R; EVNIN, LUKE, B) 19 August 2004 (2004-08-19) abstract page 14, lines 6,7 page 15, lines 10-27 page 16, line 35 - page 18, line 25 page 23, line 6 - page 25, line 38 -----	23-26, 29-32
A	US 5 690 691 A (CHEN ET AL) 25 November 1997 (1997-11-25) cited in the application the whole document -----	26,27, 30-32
A	US 2003/208212 A1 (CIGAINA VALERIO) 6 November 2003 (2003-11-06) cited in the application the whole document -----	18,22, 23,25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/014680

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-17
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery and therapy
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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